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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,370	08/21/2003	Robert P. Hart	2500-016D	7450

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EXAMINER	
FITZGERALD, JOHN P	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/645,370	HART, ROBERT P.	
	Examiner	Art Unit	
	John P Fitzgerald	2856	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-32 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 26 September 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 06/04/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10 and 26 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 10 and 26 recite the limitation "said monitor" in line 1, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,336,479 to Nanaji. Nanaji discloses a leak detection system for a fuel dispensing vapor recovery system that recovers vapors during refueling of a vehicle and returns the vapors to a storage tank (Figs. 1-3) having: at least one fuel dispensing point (10) that delivers fuel from the storage tank (40) to the vehicle (12) and returns recovered vapors expelled from the vehicle into a vapor return passage (34) that is coupled to a vapor return pipe (see Fig. 1) and wherein the vapor return pipe is couple to the storage tank; a series of pressure sensors (71, 73) located measuring first and second vapor pressures within various sections (including a defective/leaking

dispensing point (hanging hardware) at the nozzle due to a faulty valve or other valves within the vapor return system (Nanaji: col. 2, lines 1-9), as recited in claims 7-9) of the vapor return passage/piping which are compared (i.e. differential pressure measurements) to determine if any leaks are present within the vapor return line (Nanaji: col. 2, lines 37-55) (***note***: two pressure sensors inherently act as an air-flow sensor indicating a flow due to a pressure differential. For example, Bernoulli's equation $\frac{p_2 - p_1}{\rho} = \frac{V_1^2 - V_2^2}{2}$ states that flow along a streamline (i.e. centerline of the vapor passage and neglecting minimal gravity effects of vapor/gas due to low density) will occur due to a pressure differential or pressure drop, flowing in the direction of high pressure to low pressure (forward or reverse based on positive or negative values of V, as recited in claim 6) and coupled with the continuity equation $Q = A_1V_1 = A_2V_2$, one of ordinary skill in the art can easily calculate the amount of vapor "flow."); a control system (50) that is electronically coupled to the pressure sensors to receive information (pressure sensor signals) via pressure sensor input lines (81, 83); the control system following instructions/routines processing and storing the input data/signals to determine if an error condition (i.e. a leak) exists and take necessary action such as shutting down the fuel dispenser (10) while simultaneously sending a signal/report/alarm to an operator (i.e. a POS operator of the pumps, as recited in claims 5 and 10) that a problem has occurred, or other like procedures (as recited in claims 2 and 3) (Nanaji: col. 5, lines 12-67) (***note:*** remote systems, as recited in claim 4, such as the employment of RF signals (Nanaji: col. 4, line 23) are considered old and well known in the art for control and signal transmission, and as such, considered as an obvious design choice well within the purview

of one of ordinary skill), wherein leak due to flow is detected when the at least one dispensing point is idle or "not in use." (Nanaji: col. 2, line 9) (as recited in claim 1 and 10).

5. Claims 11-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,336,479 to Nanaji. Nanaji discloses a method for detecting a leak in a fuel dispensing vapor recovery system that recovers vapors during refueling of a vehicle and returns the vapors to a storage tank (Figs. 1-3) including the steps of: delivering fuel from the storage tank (40) to the vehicle (12) through at least one fuel dispensing point (10); returning vapors received by the at least one fuel dispensing point that are expelled from the vehicle into a vapor return passage (34); returning the recovered vapors from the vapor return into a vapor return pipe (see Fig. 1) and coupled to the storage tank; a series of pressure sensors (71, 73) located measuring first and second vapor pressures within various sections (including a defective/leaking dispensing point (hanging hardware) at the nozzle due to a faulty valve or other valves within the vapor return system (Nanaji: col. 2, lines 1-9), of the vapor return passage/piping which are compared (i.e. differential pressure measurements) to measure the amount of vapor flow (note: flow meters and similar flow measurement devices utilized in vapor recovery lines are considered old and well know in the art, and as such, considered well within the design choice purview of one of ordinary skill in the art) being returned back to the storage tank from the at least one fuel dispensing point and determining if vapor flow is detected in the vapor return passage (Nanaji: col. 2, lines 37-55) (***note***: two pressure sensors inherently act as an air-flow sensor indicating a flow due to a pressure differential. For example, Bernoulli's equation $\frac{p_2 - p_1}{\rho} = \frac{V_1^2 - V_2^2}{2}$ states that flow along a streamline (i.e. centerline of the vapor passage and neglecting minimal gravity effects of vapor/gas due to low density) will occur due to a pressure differential or pressure drop, flowing

in the direction of high pressure to low pressure (forward or reverse based on positive or negative values of V, as recited in claim 15) and coupled with the continuity equation $Q = A_1V_1 = A_2V_2$, one of ordinary skill in the art can easily calculate the amount of vapor "flow."); employing a control system (50) that is electronically coupled to the pressure sensors to receive information (pressure sensor signals) via pressure sensor input lines (81, 83); the control system following instructions/routines processing and storing the input data/signals to determine if an error condition (i.e. a leak) exists and take necessary action such as shutting down the fuel dispenser (10) while simultaneously sending a signal/alarm or reporting to an operator (i.e. a POS operator of the pumps, as recited in claim 16) that a problem has occurred, or other like procedures (as recited in claims 12 and 13) (Nanaji: col. 5, lines 12-67) (***note:*** remote systems, as recited in claim 14, such as the employment of RF signals (Nanaji: col. 4, line 23) are considered old and well known in the art for control and signal transmission, and as such, considered as an obvious design choice well within the purview of one of ordinary skill), wherein leaks are detected/determined based on flow is detection when the at least one dispensing point is idle or "not in use." (Nanaji: col. 2, line 9) (as recited in claims 11, 12 and 16).

6. Claims 17-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,336,479 to Nanaji. Nanaji discloses a leak detection system for a fuel dispensing vapor recovery system that recovers vapors during refueling of a vehicle and returns the vapors to a storage tank (Figs. 1-3) having: a plurality of fuel dispensing points (10) that deliver fuel from the storage tank (40) to the vehicle (12) and capture recovered vapors expelled from the vehicle into a vapor return passage (34) that is coupled to a vapor return pipe (see Fig. 1) and wherein the vapor return pipe is couple to the storage tank; a series of pressure sensors (71, 73) located

measuring first and second vapor pressures within various sections (including a defective/leaking dispensing point (hanging hardware) at the nozzle due to a faulty valve or other valves within the vapor return system (Nanaji: col. 2, lines 1-9), as recited in claims 23-25) of the vapor return passage/piping which are compared (i.e. differential pressure measurements) to determine if any leaks are present within the vapor return line (Nanaji: col. 2, lines 37-55) (***note***: two pressure sensors inherently act as an air-flow sensor indicating a flow due to a pressure differential. For example, Bernoulli's equation $\frac{p_2 - p_1}{\rho} = \frac{V_1^2 - V_2^2}{2}$ states that flow along a streamline (i.e. centerline of the vapor passage and neglecting minimal gravity effects of vapor/gas due to low density) will occur due to a pressure differential or pressure drop, flowing in the direction of high pressure to low pressure (forward or reverse based on positive or negative values of V, as recited in claim 22) and coupled with the continuity equation $Q = A_1V_1 = A_2V_2$, one of ordinary skill in the art can easily calculate the amount of vapor "flow."); a control system (50) that is electronically coupled to the pressure sensors to receive information (pressure sensor signals) via pressure sensor input lines (81, 83); the control system following instructions/routines processing and storing the input data/signals to determine if an error condition (i.e. a leak) exists and take necessary action such as shutting down the fuel dispenser (10) while simultaneously sending a signal/report/alarm to an operator (i.e. a POS operator of the pumps, as recited in claims 18, 19, 21 and 26) that a problem has occurred, or other like procedures (as recited in claims 2 and 3) (Nanaji: col. 5, lines 12-67) (***note:*** remote systems, as recited in claim 20, such as the employment of RF signals (Nanaji: col. 4, line 23) are considered old and well known in the art for control and signal transmission, and as such, considered as an obvious design choice well

within the purview of one of ordinary skill), wherein leak due to flow is detected when the at least one dispensing point is idle or "not in use." (Nanaji: col. 2, line 9) (as recited in claim 17, and 26).

7. Claims 27-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,336,479 to Nanaji. Nanaji discloses a method for detecting a leak in a fuel dispensing vapor recovery system that recovers vapors during refueling of a vehicle and returns the vapors to a storage tank (Figs. 1-3) including the steps of: delivering fuel from the storage tank (40) to a plurality of dispensing points (10); recovering vapor expelled from the vehicle (12) at the plurality of dispensing points and returning the vapor into a vapor return passage (34); returning the recovered vapors from the vapor return into a vapor return pipe (see Fig. 1) and coupled to the storage tank (***note:*** the employment of a plurality of vapor return passages coupled to a common vapor return pipe is considered to be an obvious design choice well within the purview of one having ordinary skill in the art); a series of pressure sensors (71, 73) located measuring first and second vapor pressures within various sections (including a defective/leaking dispensing point (hanging hardware) at the nozzle due to a faulty valve or other valves within the vapor return system (Nanaji: col. 2, lines 1-9), of the vapor return passage/piping which are compared (i.e. differential pressure measurements) to measure the amount of vapor flow (***note:*** flow meters and similar flow measurement devices utilized in vapor recovery lines are considered old and well know in the art, and as such, considered well within the design choice purview of one of ordinary skill in the art) being returned back to the storage tank from the at least one fuel dispensing point and determining if vapor flow is detected in the vapor return passage (Nanaji: col. 2, lines 37-55) (***note***: two pressure sensors inherently act as an air-flow

sensor indicating a flow due to a pressure differential. For example, Bernoulli's equation $\frac{p_2 - p_1}{\rho} = \frac{V_1^2 - V_2^2}{2}$ states that flow along a streamline (i.e. centerline of the vapor passage and neglecting minimal gravity effects of vapor/gas due to low density) will occur due to a pressure differential or pressure drop, flowing in the direction of high pressure to low pressure (forward or reverse based on positive or negative values of V, as recited in claim 31) and coupled with the continuity equation $Q = A_1V_1 = A_2V_2$, one of ordinary skill in the art can easily calculate the amount of vapor "flow."); employing a control system (50) that is electronically coupled to the pressure sensors to receive information (pressure sensor signals) via pressure sensor input lines (81, 83); the control system following instructions/routines processing and storing the input data/signals to determine if an error condition (i.e. a leak) exists and take necessary action such as shutting down the fuel dispenser (10) while simultaneously sending a signal/alarm or reporting to an operator (i.e. a POS operator of the pumps, as recited in claim 32) that a problem has occurred, or other like procedures (as recited in claims 28 and 29) (Nanaji: col. 5, lines 12-67) (***note:*** remote systems, as recited in claim 30, such as the employment of RF signals (Nanaji: col. 4, line 23) are considered old and well known in the art for control and signal transmission, and as such, considered as an obvious design choice well within the purview of one of ordinary skill), wherein leaks are detected/determined based on flow is detection when the at least one dispensing point is idle or "not in use." (Nanaji: col. 2, line 9) (as recited in claims 27, 28 and 32).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stroh teaches the mounting of a flow sensor within the vapor recovery line to measure flow rate; Mastandrea et al. teach a method and apparatus for detecting leaks in a storage tank and Powell et al. teach an apparatus for testing for valve leaks by differential pressure signature methods.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fitzgerald whose telephone number is (571) 272-2843. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams, can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JF
09/02/2004

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